



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,583	10/12/2005	Denis Roller	125402	2540
25944	7590	03/05/2007	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			LEE, BENJAMIN P	
			ART UNIT	PAPER NUMBER
			3641	
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE		DELIVERY MODE	
3 MONTHS	03/05/2007		PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/552,583	ROLLER ET AL.	
	Examiner	Art Unit	
	Benjamin P. Lee	3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 19 January 2007.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-4, 7, 8 and 10-17 is/are rejected.
- 7) Claim(s) 5, 6, 9 and 18-20 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

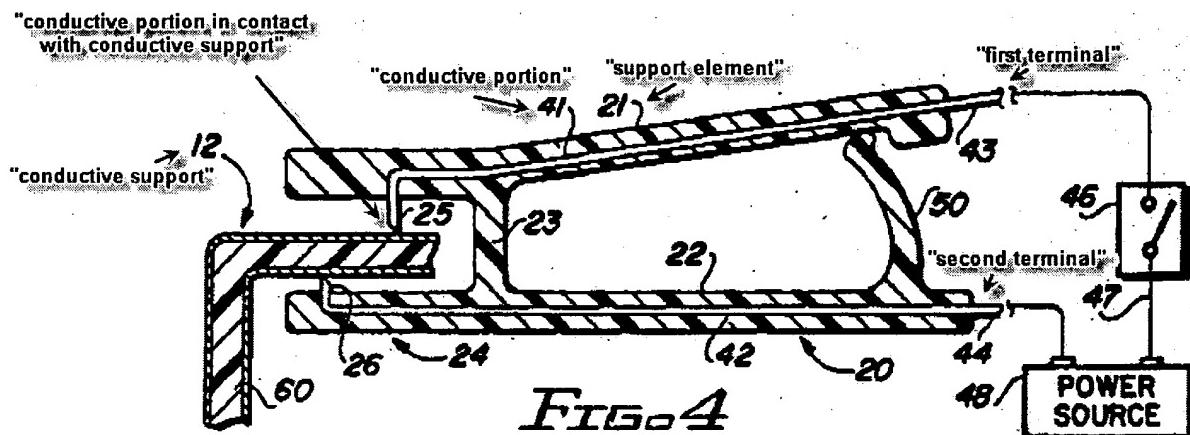
- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

1. Applicant has amended claims 17 and 18 to comply with office action dated 10/20/2006.

Response to Arguments

2. Applicant's arguments filed 1/19/2007 have been fully considered.
3. In regards to claim 1, Applicants arguments are not persuasive. Examiner respectfully disagree that the pyrotechnic charge disclosed by Hans et al does not constitute a "microcharge". Applicant is reminded that the claimed subject matter must be considered in its broadest sense. Examiner has interpreted the term "micro" to indicate small relative size (www.dictionary.com) and in the context of Applicant's claimed subject matter, the pyrotechnic (item 17 of Hans et al fig. 3D) disclosed by Hans et al constitutes a "microcharge". Applicant is also reminded that the features upon which applicant relies to distinguish Applicant's invention from Hans et al (i.e., mass of microcharge) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Further, Examiner believes that the apparatus disclosed by Hans et al in figure 4 below teaches all the subject matter of Applicant's claim 1.



Hans et al.

4. Examiner also respectfully disagree with Applicant's argument stating that the Hans et al fail to disclose "a microcharge being located at a sufficient distance from the conductive support to be able to be ignited by localized heating of the support". Hans et al disclose that the conductive support comprises copper foil (col. 2, lines 1-46) that conducts the current from the "conductive portion" (item 41) of the "support element" (item 21). It is well known in the art that conductive material has at least some degree of resistance and consequently some degree of heating during conduction of electrical current. This "electric current" and consequently the heating of the conductive support is disclosed by Hans et al as being "capable of" initiating the pyrotechnic charge. Applicant also argues that the conductive portion of the support element contacts the conductive support "just beneath" the pyrotechnic microcharge. Applicant is again reminded that Examiner must consider claim language in its "broadest sense". Therefore, Examiner has concluded that the location of the apparatus as disclosed by

Art Unit: 3641

Hans et al constitutes "just beneath" to the degree specified by Applicant, since the contact point is located "beneath" the microcharge and the descriptive word "just" lacks relative context.

5. In regards to claims 11-18, Applicant's arguments are not persuasive. Examiner respectfully disagree that the "microcharge" disclosed by Hans et al is meant to cause an "explosion" of the rocket. Hans et al disclose that the igniter produces combustion gases which ignite the rocket propellant (actuating element) (col. 1, lines 46-62 and col. 4, lines 26-64).

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.

- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) The Names Of The Parties To A Joint Research Agreement: See 37 CFR 1.71(g).
- (e) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.
- (f) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
 - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject

matter of the claimed invention. This item may also be titled "Technical Field."

- (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.
- (j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation.

Art Unit: 3641

There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).

- (k) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
- (l) Sequence Listing, See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4, 7, 8, 10-13 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Hans et al. (U.S. Patent 5123355).

7. In regards to claim 1, Hans et al disclose the following:

- a. a device for the electrical initiation of at least one pyrotechnic microcharge (item 17 of fig. 3D following and col. 2, lines 39-52);
- b. a support element having at least one electrically conductive portion

connected to a first terminal of a central control unit (item 21 of fig. 4 following);

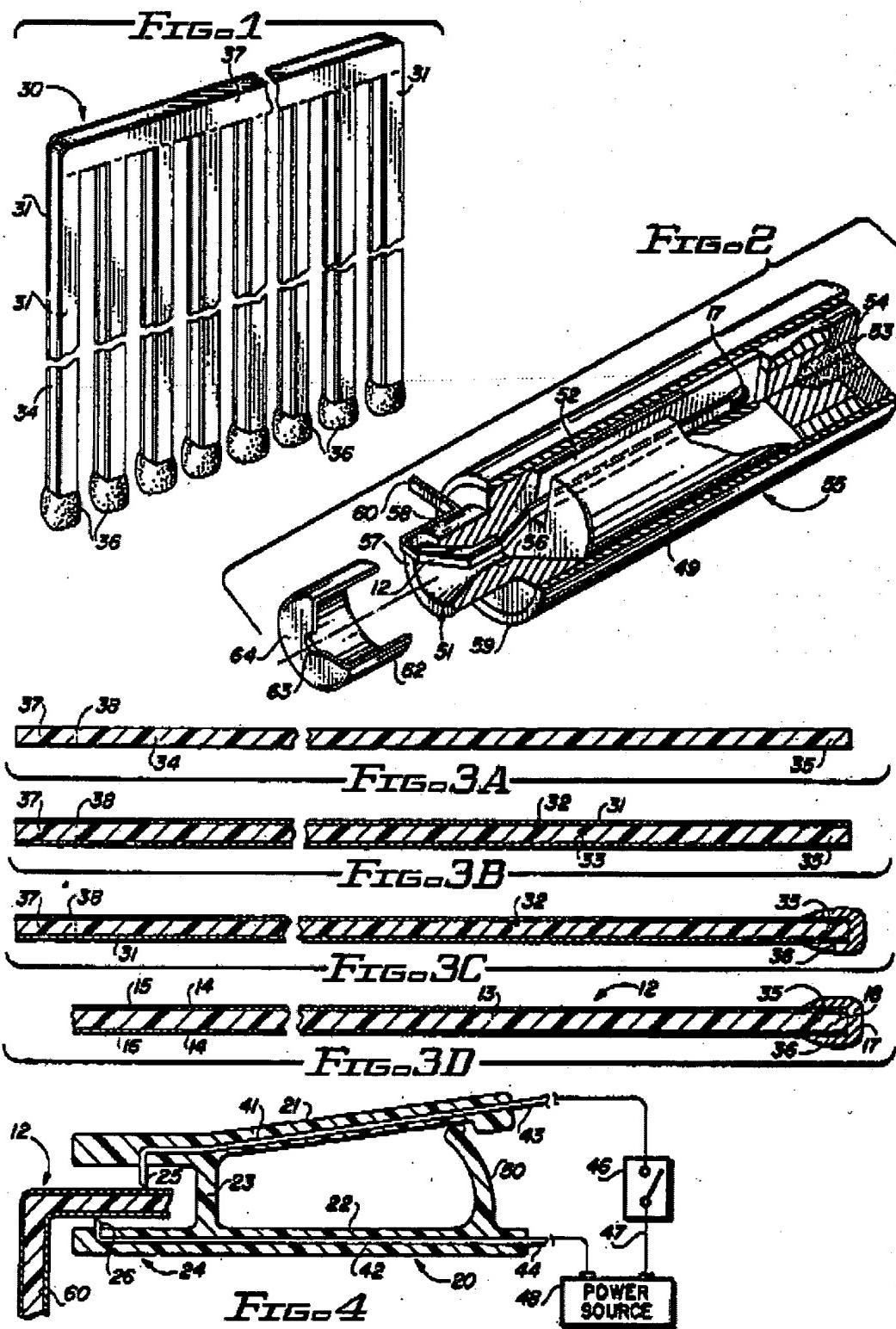
- c. a second terminal of said central control unit being intended to be electrically connected to an electrically conductive support (item 12 of fig. 4 and 3D following and col. 3, lines 54-58);
- d. the microcharge being located at a sufficient distance from said conductive support to be able to be ignited by localized heating of the support (col. 4, lines 50-64);
- e. heating being carried out via the conductive portion placed in contact with the conductive support, just beneath the pyrotechnic microcharge (col. 4, lines 50-64 and see fig. 3D following).

2. In regards to claim 2, Hans et al disclose that the pyrotechnic microcharge is deposited on the conductive support (see fig. 3D following).

3. In regards to claim 3, Hans et al disclose that the pyrotechnic microcharge is separated from the support by at least one thermally conductive layer (col. 3, lines 40-47).

4. In regards to claim 4, Hans et al disclose that the conductive portion is produced at least at the top of a finger (item 25 of fig. 4 following) being positioned so as to bear via its top against the conductive support (see fig. 4 following).

5. In regards to claim 7, Hans et al disclose that the finger consists of a boss made of flexible material formed on the support element (item 25 as shown in fig. 4 following constitutes "a small projection" as "Boss" is defined by www.dictionary.com and item 41 is disclosed as "wire" which is inherently "flexible").
6. In regards to claim 8, disclose that the support element consists of a thermoformed sheet of flexible material in which said boss is formed, the boss forming a finger intended to bear via its top against the conductive support (col. 3, lines 48-55). Note that the "support element" (item 21 of fig. 4 following) is disclosed by Hans et al to consist of "pliable plastic" which is inherently produced using a thermoforming method and item 21 constitutes a "sheet" to the degree specified by applicant.



7. In regards to claim 10, Hans et al disclose the support element comprises a plurality of fingers the position of the fingers can be adjusted.
8. In regards to claim 11, Hans et al disclose the following:
 - a. an actuating element that can be actuated by the gases emanating from the combustion of at least one pyrotechnic microcharge (col. 1, lines 44-62). Note that Hans et al disclose that igniter "burns" inherently producing a "gas" and in turn, ignites the propellant;
 - b. microcharge is located at a sufficient distance from a conductive layer to be able to be ignited by localized heating using an initiation device in accordance with that of claim 1 (see rejection of claim 1 and col. 4, lines 50-64);
 - c. an electrically conductive portion (col. 3, lines 40-47) is placed on said pyrotechnic microcharge in contact with the conductive layer, just beneath said pyrotechnic microcharge.
9. In regards to claim 12, Hans et al disclose that the pyrotechnic microcharge is deposited on a face of the conductive layer and in that the conductive portion is in contact with the face of the conductive layer on the opposite side to that on which the pyrotechnic microcharge is deposited (col. 3, lines 40-47 and see figs. 4 and 3D followng).

10. In regards to claim 13, Hans et al disclose that the conductive layer consists of a metal film (col. 3, lines 40-47).

11. In regards to claim 17, Hans et al disclose that the microactuator is produced by assembling superposed layers. Note that each igniter (item 12 of fig. 4 following) is constructed of a plastic film body "layer" with a foil overlay constituting "assembling superposed layers" (col. 3, lines 40-45).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 3641

12. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hans et al. (U.S. Patent 5123355) in view of Baginski et al. (U.S. Patent 6105503).

13. In regards to claim 14, Hans et al fail to disclose that the film is made of aluminum. However, Baginski et al disclose a conductive film made of aluminum for initiating a pyrotechnic device (col. 6, lines 4-10). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use a conductive film made of aluminum because it is a good conductor and less susceptible to corrosion.

14. In regards to claims 15 and 16, the combination of Hans et al and Baginski et al disclose the invention except for the thickness of the aluminum layer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to require a range of values for the thickness of the aluminum layer, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Allowable Subject Matter

15. Claims 5, 6, 9 and 18-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: In regards to claim 5, the closest prior art fails to disclose, in combination with the base claim and all intervening claims,

Art Unit: 3641

"the finger is mounted on a spring". In regards to claim 6, the closest prior art fails to disclose, in combination with the base claim and all intervening claims, "the finger is an electrode made of carbon or made of titanium". In regards to claim 9, the closest prior art fails to disclose, in combination with the base claim and all intervening claims, "the support element comprises a plurality of fingers". In regards to claim 18, the closest prior art fails to disclose, in combination with the base claim and all intervening claims, "microactuator includes a cavity formed by the multilayer assembly". In regards to claim 19, the closest prior art fails to disclose, in combination with the base claim and all intervening claims, "a plurality of adjacent microactuators"...initiation device comprising a plurality of conductive portions connected in parallel to the first terminal of the central control unit".

16. Claims 1-4, 7, 8 and 10-17 are rejected. Claims 5, 6, 9 and 18-20 are objected to.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

Art Unit: 3641

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin P. Lee whose telephone number is 571-272-8968. The examiner can normally be reached between the hours of 8:30am and 5:00pm on Monday through Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 571-272-6873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


MICHELLE CLEMENT
PRIMARY EXAMINER

Application/Control Number: 10/552,583
Art Unit: 3641

Page 16